

Physical Activity and Depression Questionnaire: A Study on Osteopathic Medical Students



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Recent article on Mental Health in Medical Students

JAMA | **Original Investigation**

Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation Among Medical Students A Systematic Review and Meta-Analysis

Lisa S. Rotenstein, BA; Marco A. Ramos, MPhil; Matthew Torre, MD; J. Bradley Segal, BA, BS; Michael J. Peluso, MD, MPhil;
Constance Guille, MD, MS; Srijan Sen, MD, PhD; Douglas A. Mata, MD, MPH

CONCLUSIONS AND RELEVANCE In this systematic review, the summary estimate of the prevalence of depression or depressive symptoms among medical students was 27.2% and that of suicidal ideation was 11.1%. Further research is needed to identify strategies for preventing and treating these disorders in this population.

JAMA. 2016;316(21):2214-2236. doi:[10.1001/jama.2016.17324](https://doi.org/10.1001/jama.2016.17324)



Background

- Studies show that 27.2% medical students are depressed and 11.1% have suicidal ideation. (*Rotenstein, L., et al. JAMA 2016*)
- Majority of studies have been performed on allopathic medical programs. (*Ghudasara, SL., et al. Acad Med 2011; Thompson, G., et al. Teach Learn Med 2016; Wolf, MR., et al. Acad Psychiatry 2016*)
- Little research has been performed specifically on Osteopathic medical school students (*Wiegand, S., et al. JAOA 2014*)
- 1 of the 4 Tenets of Osteopathic Medicine:
 - *“The body is a unit; the person is a unit of body, mind, and spirit.”*

Purpose



- *“The body is a unit; the person is a unit of body, mind, and spirit.”*
- Our study seeks to examine:
 1. Amount of physical activity in which Osteopathic Medical Students engage.
 2. Whether osteopathic principles play a role in the level of physical activity.
 3. The relationship between physical activity and depression in Osteopathic Medical Students.

Methods



- 26 question electronic survey:
 - Demographics
 - Sex, marital status, age, ethnicity
 - Beck's Depression Inventory (BDI-ii)
 - Morganstern Exercise Survey
 - Deciding factors in applying to medical school
 - Qualitative comment section
- Approved by TouroCOM IRB (HSIRB# 1685)

Survey Examples: Beck's Depression Inventory



11. Sadness

- A. I do not feel sad.
- B. I feel sad.
- C. I am sad all the time and I can't snap out of it.
- D. I am so sad and unhappy that I can't stand it.

12. Pessimism

- A. I am not discouraged about the future.
- B. I feel more discouraged about my future than I used to be.
- C. I do not expect things to work out for me.
- D. I feel the future is hopeless and will only get worse.

Methods



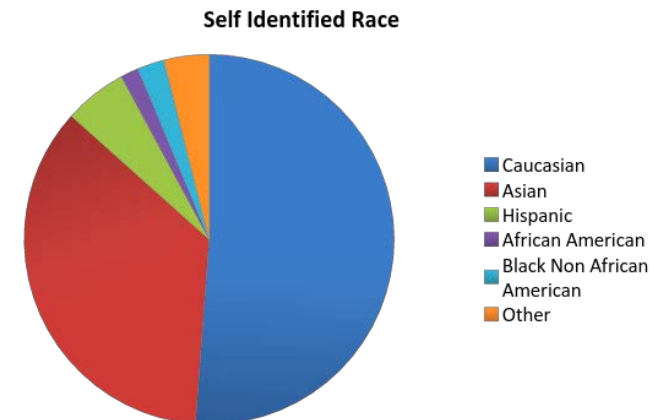
Analysis:

- Each student's response was given a cumulative Beck's Depression Inventory Score (BDI)
- Self-reported exercise hours in each category (light, moderate, vigorous) was averaged and summed



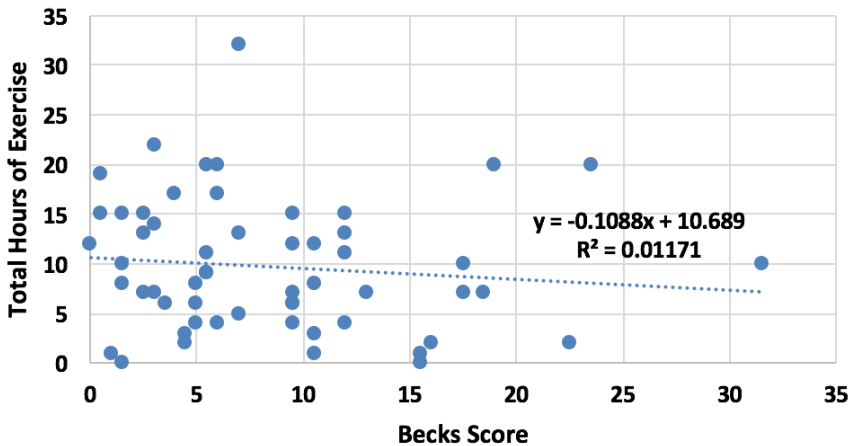
Results

- Out of 145 students who took the survey, 124 students completed it, yielding a 85.5% completion rate
 - Class of 2020: 67 responses
 - 28.8% showed mild to severe depression
 - Class of 2019: 57 responses
 - 26.3% showed mild to severe depression
 - 61 male, 63 females
 - Average age is 26.99
 - Lowest age bracket is 20-24
 - Highest age bracket is 40-44

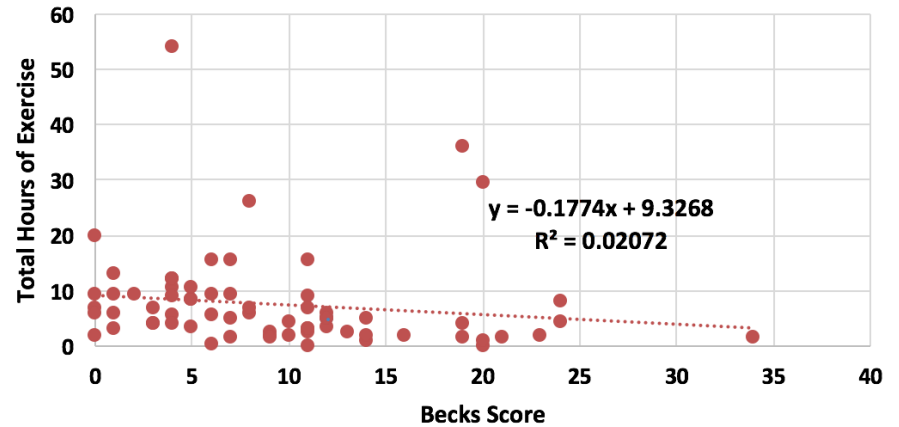


Results: BDI vs Total Hours of Exercise

**BDI vs Total Number of Hours of Exercise
Class of 2019**



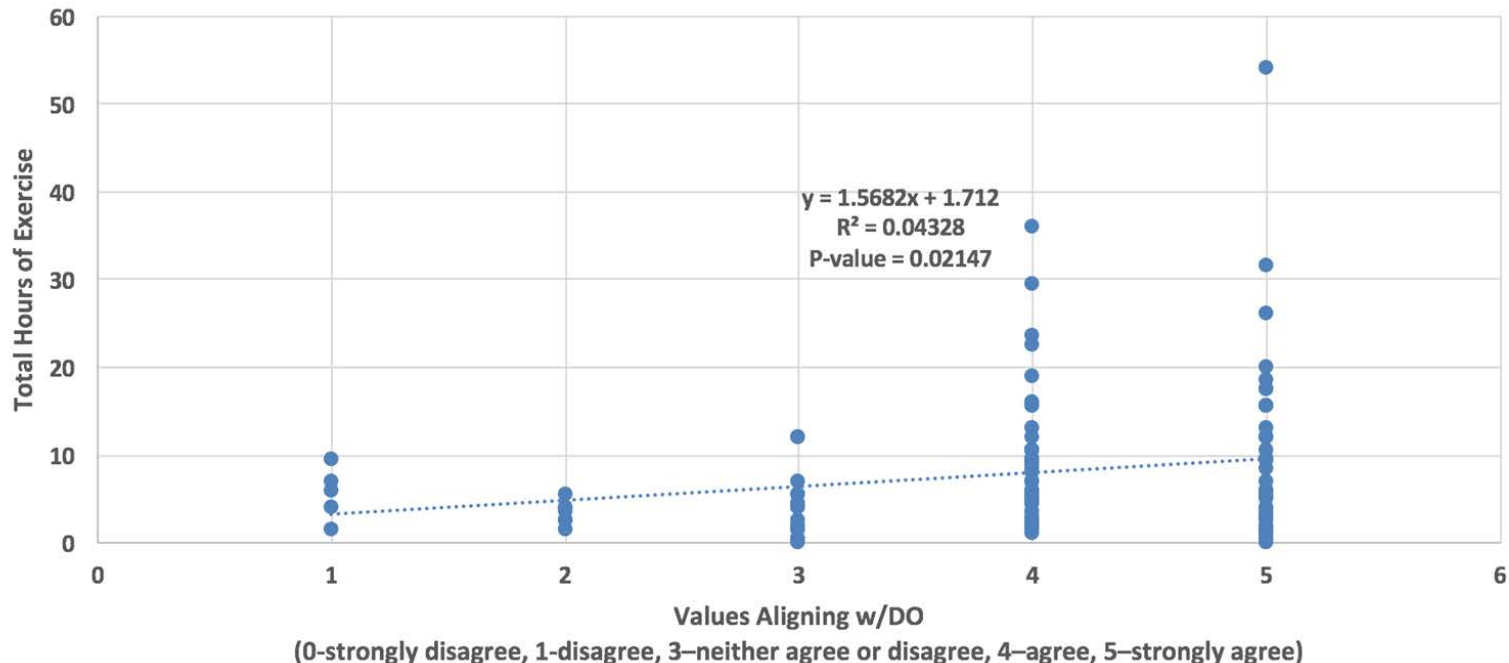
**BDI vs Total Number of Hours of Exercise
Class of 2020**



There is a trend that greater amounts of physical activity is related to a lower Beck's Depression Index Score.

Do you feel that your values towards mental health and exercise align with an osteopathic mindset?

Values Aligning w/ DO vs Hours of Exercise
Class of 2019 and 2020



Using ANOVA with p-value < 0.05 , we found there to be statistical significance in our data. There is a correlation that the more an osteopathic medical student's personal values align with an osteopathic mindset the more they exercise.

Discussion



- Overall, there is general trend that higher total number of physical activity hours is related to a lower Beck's Depression Inventory score.
- Students who self-reported agreement with osteopathic principles showed greater participation in physical activity.
- Regardless of exercise intensity it was found that as exercise hours increased, BDI decreased

Do you feel your values towards mental health and exercise align with an osteopathic mindset?



“I definitely feel a connection between my physical and mental well being. Exercise makes me feel better mentally, and when I feel good mentally I’m often motivated to take better care of myself.”

“I strongly identify with osteopathic values and live in adherence with them. I try my best to exercise and meditate daily, and have noticed that I do best in school when I take time for myself.

Conclusion



- Students should be aware of stress related to medical school and also of coping mechanisms available to them. Exercise may be one of those coping mechanisms.
- More research should be done to determine if osteopathic principles play a role in resilience to depression, or the level of physical activity.

Thank you!

